ARMY VEHICLE
ACCIDENT PREVENTION

TERMINAL LEARNING OBJECTIVE

U.S. ARMY SAFETY CENTER

Apply the risk management process to Army Motor Vehicle operations (wheel and tracks), in accordance with AR 600-55, AR 38 and FM 100-14.

PAST HISTORY CAUSES

U.S. ARMY SAFETY CENTER

- Speeding/too fast f
  conditions
- Following too close
- Backing without ground guides
- Misjudging clearance
- Inattention

SOURCES OF HUMAN ERROR

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- INDIVIDUAL
- TRAINING
- LEADER
- STANDARDS
- SUPPORT

INDIVIDUAL

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Self-discipline (Soldier knows and is trained to standard, but does not follow the standards).

DRIVER FAILURES

- **SPEEDING**
- **BACKING W/O A GROUND-GUIDE**
- **FOLLOWING TOO CLOSE**
- **INATTENTION**

Mission: Transport Soldiers to Field Training Exercise

5 Nov 99

Hazard

- Excessive speed
- Vehicle can rollover if improperly controlled

Results

- 1 fatality
- 19 injuries

Controls

- Senior occupant performs duties as required by AR 600-55
- Maintain proper speeds
- Properly react to emergency situations

VG-DRUMTRUCK-9-01

TRAINING

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Training is insufficient, incorrect, or no training is given for the task.

DRIVER FAILUR

- **DRIVING TOO FAST FOR CONDITIONS**
- **BACKING W/O A GROUND-GUIDE**
- **FOLLOWING TOO CLOSE**
- **MISJUDGING CLEARANCE**

GROUND GUIDE REQUIRED?

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LEADER

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Leader does not enforce known standards, or improperly supervises.

FAILURES

- **INADEQUATE DRIVER TRAINING**
- **INADEQUATE PROCEDURES**
- **LACK OF CORRECTIVE ACTION**

Mission: Transport M26 MLRS Pods for Storage

17 Aug 00

Hazards

- Overloaded trailer
- Over confident & inattention
- Unclear standards
- Leadership failure

Results

- 2 Injuries
- $450,000 cost plus truck & trailer damage

Controls

- Train leaders in system limitations
- Train drivers & senior occupants on responsibilities
- Clarify load configuration guidance
- Risk management education

STANDARDS

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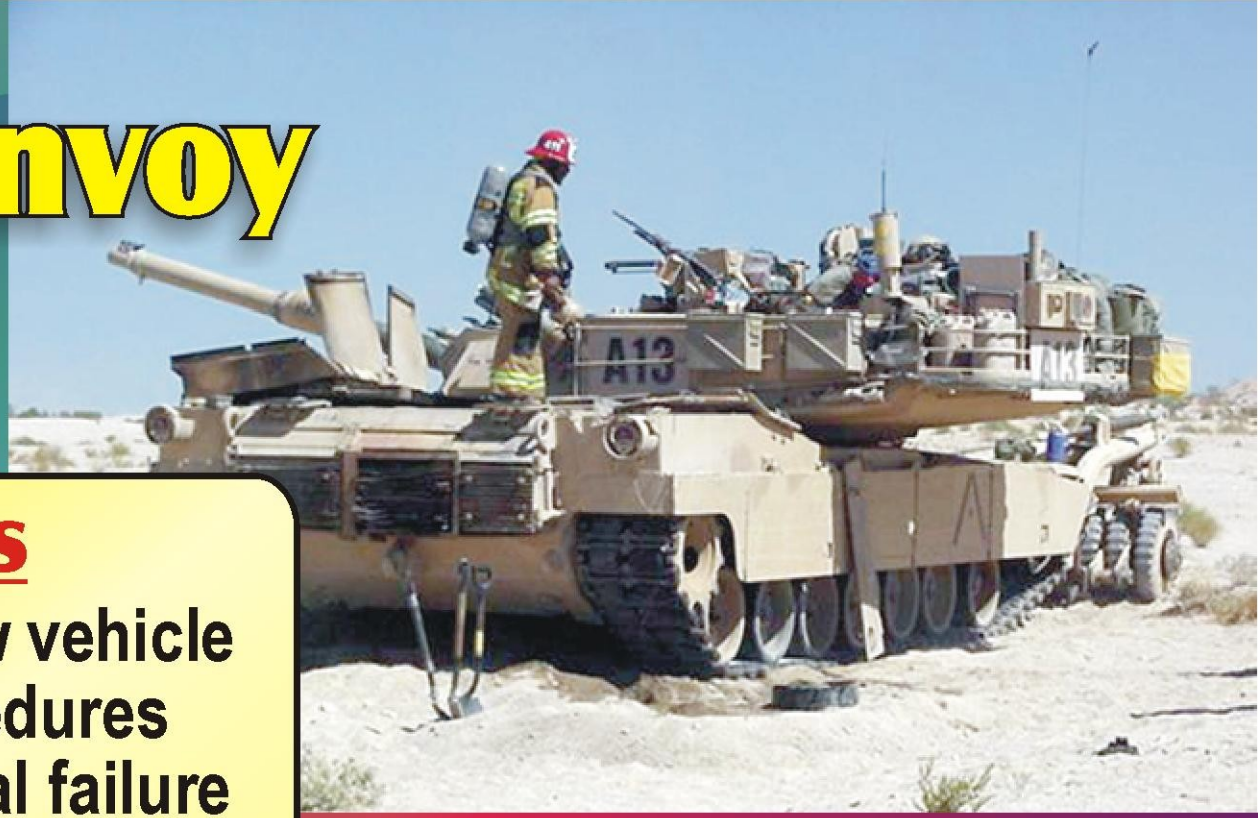
Standard or procedure is not clear, practical, or none existent.

FAILURE

- **MATERIAL FAILURE**
- **WRONG ACTION/PROCEDURE**

- **DRIVING HAZARDS**

Mission: Convoy Escort



Hazards

- Failure to follow vehicle operating procedures
- Suspect material failure
- Inexperienced crew ???

Results

- Destroyed engine

Controls

- Comply with vehicle operation/ emergency procedures
- Enforce PMCS standards
- Implement training programs for all equipment in unit

SUPPORT

U.S. ARMY SAFETY CENTER

Inadequate facilities/services, equipment or material is improperly designed or not provided.

FAILURES

- **INADEQUATE DRIVER TRAINING**
- **DRIVING HAZARDS**
- **MATERIAL FAILURE**
- **MISUSE OF TOOLS/EQUIPMENT**

SAFE DRIVING OPERATION

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Commanders will ensure:

- Drivers do not drive more than 10 continuous hours. AR 385-55, Para 2-6, a
- Combined duty will not exceed 12 hrs in 24 hr period without 8 consecutive hrs of rest. AR 385-55, Para 2-6, a
- Driver will take 15-min rest breaks every 2 to 3 hours of driving or every 100 to 150 miles. AR 385-55, Para 2-6, c

SAFE DRIVING OPERATION

- Qualified assistant driver assigned for more than 10 hrs. AR 385-55, Para 2-6, b
- Headphones or earphones are prohibited while driving. AR 385-55, Para 2-6, d
- Drivers will not eat, drink, or smoke while vehicle is in motion. AR 385-55 Para 2-6, f

SAFE DRIVING OPERATION

U.S. ARMY SAFETY CENTER

- Operators are responsible for bringing any vehicle shortcoming to the supervisor's attention. AR 385-55,Para 2-7, d
- Vehicle's will not be operated with conditions outlined in AR 385-55, Para 2-7, a (1) through (8) unless authorized by the unit commander.

FIRE PREVENTION

- Free Of Gasoline Leak & Class III Diesel, Oil, & Water Leaks. AR 385-55, Para 2-12 a
- Electric Lamps Must Meet National Electric Code Standards (NEC) AR 385-55, Para 2-12, b
- No Smoking In Shops, Garages, Or Motor Pool OR Unmarked Areas. AR 385-55, Para 2-12, c

FIRE PREVENTION

- **No Smoking in Parking areas.**
  (Except in designated area)
- **When refueling turn Off engine, put in low range.**
  AR 385-55, Para 2-12, d
- **Set Parking brake or chock wheels.**
- **Gasoline will not be used for any cleaning purpose.**
  AR 385-55, Para 2-12, g

HAZARDOUS MATERIAL

- Flammable
- Ammunition
- Poisons
- Combustibles

HAZARDOUS MATERIAL

U.S. ARMY SAFETY CENTER

- Placarding requirements comply with Title 49, Code of Federal Regulation and host nation.
- Load blocked and braced IAW DOT regs.

AR 385-55, Para 2-13,a

HAZARDOUS MATERIAL

U.S. ARMY SAFETY CENTER

Drivers will:

- Follow preplanned rout
- Park To limit exposure.
- Park no less than minimum fire separation distance (National Fire Protection Association).

AR 385-55, Para 2-13

HAZARDOUS MATERIAL

U.S. ARMY SAFETY CENTER

Vehicle Inspection
AR 55-355

- DD Form 626 (Vehicle Inspection)
- Correct all unsatisfactory conditions.
- Brake set & wheel chocked during loading/unloading, & tie down.

HAZARDOUS MATERIAL

U.S. ARMY SAFETY CENTER

Training Requirements For Drivers

- Emergency Equipment.
- Forms & Records (Accident Reporting)
- Records of Training Maintained.
- Recurrent Training is required every two years to transport Hazardous Materials

HAZARDOUS MATERIAL

U.S. ARMY SAFETY CENTER

- Containers must meet DOT regulations.
- No riders on or in cargo area transporting explosives, fuel, or other hazardous material.
- Explosives transport prohibited in passenger compartment of commercial AMVs.

AR 385-55, Para 2-16.

Protect the Force Through Risk Management

SAFETY EQUIPMENT

U.S. ARMY SAFETY CENTER

- Seat Belts Will Be Worn By All.
- Eye protection will be worn (no windshield, or windshield down).
- Kevlar Helmets Or combat vehicle crewman (CVC) worn while combat vehicles are operated.

AR 385-55, Para 2-16.

SAFETY EQUIPMENT

U.S. ARMY SAFETY CENTER

- All trailers equipped with safety chains.
- Low beam lights on public highways.
- Highway warning kits & SOPs.
- Chock blocks equipped & used incline or maintenance.

AR 385-55, Para 2-16.

WHERE DO WE PUT THE CHOCK BLOCK?

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MOVEMENT OF PERSONNEL

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- Transported In Sedans, Wagons, or Buses.

- When tactical vehicle is used

  - Not last vehicle in convoy
  - Adequate fixed seating
  - Personnel seated while vehicle is in motion

AR 385-55, Para 2-17

MOVEMENT OF PERSONNEL

U.S. ARMY SAFETY CENTER

Before starting the vehicle, drivers transporting personnel must set the hand brake then:

- Check tailgate, safety strap and ensure passengers are seated.
- After stopping, release safety device and lower tailgate.

AR 385-55, Para 2-16.

Mission: Convoy to Jasper, IN

20 Aug 00

Hazards

- Safety Strap not in place
- Personnel hanging from Vehicle while in motion
- Electrical shock

Results

- 1 Fatality

Controls

- Accountability of personnel
- Install and secure all safety equipment

VG-JASPER0-20Aug

MOVEMENT OF PERSONNEL

U.S. ARMY SAFETY CENTER

- Driver will not back vehicle before checking.
- Clearance & giving warning.
- Use ground guides

AR 385-55, Para 2-16.

MOVEMENT OF PERSONNEL

U.S. ARMY SAFETY CENTER

- Use ground guides for all buses, 12 passenger or greater vehicle & 2 1/2 ton & greater.
- Keep Ground Guides In View At All Times.
- If ground guides not available, dismount, Go To Rear & Check *Clearance*.

TACTICAL VEHICLE OPERATIONS

U.S. ARMY SAFETY CENTER

Before vehicles move in assembly crew member will walk around vehicle to ensure no one is in danger.

- Ground guide required in the front & rear and visible to each other & driver.
- Wheel vehicles require 2 ground guides when backing with vision restricted.

TACTICAL VEHICLE OPERATIONS

U.S. ARMY SAFETY CENTER

- Commanders will apply safety standards to include:
  - Speed limits
  - Passengers transport standards
  - Vehicle maintenance

- Deviations only by the unit commander In training.

AR 385-55, Para 2-

TACTICAL VEHICLE OPERATIONS

U.S. ARMY SAFETY CENTER

- Commanders will evaluate risk versus training benefit.

- Safety Procedures in SOP's for training.

AR 385-55, Para 2-18

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

AR 600-55, Para 1-4

INSTALLATION COMMANDERS

- Over all responsible

- No lower than BN level. Para 1-4, g 3

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

RESPONSIBILITIES

COMPANY COMMANDER

- Develop & Publish Guidance For Interviews & Selection.

- Operators are properly licensed & trained.

- Drivers Licensed And Training Forms & Records Maintained IAW AR 600-55.

- Ensure sustainment training is provided.

Mission: Conduct Driver's Training

During a Convoy Operation as Part of New Equipment Training (NET) En-route to a Weapons Familiarization Range

Training

- Inadequate unit driver's qualification training IAW AR 600-55
  - No written examination administered by unit on vehicle
  - Inadequate vehicle control test
  - Driver not properly licensed on equipment
  - Inadequate road test

Leadership

- Inadequate unit supervision and participation
  - Convoy commander did not conduct convoy briefing
  - Vehicle commander exceeded posted speed limit with an inexperienced driver & failed to ensure seatbelt use of all crewmembers
  - Company chain of command above squad level did not adequately participate & supervise NET

Results

- 2 Critically Injured
- $450,000 Damage to the M1117ASV

VG-M1117ASVYakima5Jul01

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

RESPONSIBILITIES

SQUAD LEADER

- Safe driving practices IAW AR 385-55.
- Operator maintenance
- Loading techniques
- Spot checks & supervises
- Review records and forms

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

RESPONSIBILITIES

OPERATOR

- Operate vehicles in a safe manner.
- Report unsafe operating conditions of vehicles or equipment.
- Wear installed restraint systems.
- Insure cargo is properly loaded, secured and protected

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

RESPONSIBILITIES

SENIOR OCCUPANT

- Will not permit a driver who appears fatigued, physically, mentally or emotionally impaired to operate the vehicle.
- Assist driver in recognizing unsafe traffic situations.
- Overall responsibility for safety of the occupants.

Mission: Redeployment to Homestation

22 OCT 00

Hazards

- Demanding weekend drill
- Fatigued driver & co-driver
- Unlicensed and untrained driver

Results

- 1 Fatality
- 1 M998 Destroyed

Controls

- Effective & continuous risk management procedures
- Adherence to AR 385-55 & AR 600-55

VG-CRoberts-22OCT00

DRIVER TRAINING PROGRAM

LICENSE REQUIREMENTS
AR 600-55, Para 2-3

Personnel who operate a government owned or leased, must be:

- Trained in Accident Avoidance. AR 385-55, Para B-4, a
- Trained, tested & issued an (ULLS 5984-E / OF 346) US. Govt. motor vehicle operators identification card.
- Driving off installation (in U.S.) must have a valid ULLS 5984-E or OF 346 & valid civilian drivers license.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

LICENSE REQUIREMENTS

- Driving on the installation within the U.S., Occupation Specialty (MOS), are not required to have a civilian driver license, but must have a valid ULLS 5984-E or OF 346.
- Driving outside the U.S. operators must have a valid ULLS 5984-E or OF 346 and meet additional host nation and MACOM requirements.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

FORMS
AR 600-55, Para 4-1

DA Form 348-E is maintained on every person who operates a vehicle owned or leased by the Army. It also provides:

- A complete history.
- To record operator qualifications, performance, and test results.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

PHYSICAL EXAMINATIONS
AR 600-55, Para 3-3

- Military and Civilian personnel are required to undergo periodic medical examinations.

- Physical evaluation measures will be conducted prior to issuing a license and upon renewal of permits.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

FORMS

AR 600-55, Para 6-2 & 6-3

The OF 346 will be stamped or marked legibly on the front to denote the type of permit issued:

- Army Standard
- Army Learner
- Army Incidental
- Army Limited

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

ARMY STANDARD PERMIT
AR 600-55, Para 6-2

- The standard permit applies to all vehicle drivers or equipment operators.

- Expires on the same date as the individual's State driver's license expires, or 5 years from issue date whichever is sooner.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

LEARNER PERMIT
AR 600-55, Para 6-3, b

- Will be issued to persons undergoing vehicle driver or equipment operator training.

- Expires upon the completion of the training or after 90 days, whichever comes first.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

INCIDENTAL DRIVING PERMIT
AR 600-55, Para 6-3, d

- Issued to personnel who must operate vehicles or equipment for short periods.

- Must pass the vehicle driver or equipment operator written and performance test.

- Expires upon the completion of duty

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

LIMITED PERMITS
AR 600-55, Para 6-3, d

- Issued to operator's who because of physical deficiency, occupational status, training limitations or operation within a specific area.

- Expiration date will not exceed one year from the date of issue.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

RENEWALS, SUSPENSIONS & REVOCATIONS
AR 600-55, Para 6-4

- Permits may be renewed up to 90 days before the expiration date.

- Will be suspended or revoked when an individual's State or host nation driver's license is revoked or suspended.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

SUSTAINMENT TRAINING
AR 600-55, Para 4-4

- Commanders will develop and implement a sustainment training program to be conducted annually.

- First line supervisors will conduct an annual check ride. The training will be annotated on the DA Form 348-E.

DRIVER TRAINING PROGRAM

U.S. ARMY SAFETY CENTER

REMEDIAL TRAINING
AR 600-55, Para 4-5

- Commanders will establish a remedial training program for drivers or operators who have had at fault accidents or traffic violations.

- Remedial training will be documented on DA Form 348-E, section III.

BMD

U.S. ARMY SAFETY CENTER

A-UID

1st PLT
UID
2d PLT
UID
3d PLT
UID
HQ-PLT
UID

B-UID

HHC-UID

C-UID

HQ-PLT
UID
MORTARS
SCOUTS
SPT PLT
MEDICS
DFAC
MAINT
A-TEAM
B-TEAM
C-TEAM
NCO AMV

NIGHT OPERATIONS

NVD TRAINING PROGRAM

AR 600-55, Chapter 8
NCO RESPONSIBIITIES:

- Enforce NVD training program.
- Enforce speed limitations for all modes of driving.
- Understand the device limitations.
- Ensure qualification & refresher training is conducted IAW AR 600-55.

NVD ACADEMICS

U.S. ARMY SAFETY CENTER

AR 600-55, appendix I

At minimum, training will include :

- Introduction to NVD model.
- Device limitation awareness.
- Depth perception, visual a and field of vision.
- Illumination requirements
- Speed limitations

Mission: Night Movement using infrared lights & black out drive

Hazards

- Reduced visibility
- Speed

Results

- LMTV destroyed $135,000
- 1 fatality
- 2 minor injuries

Controls

- Proper use of lead and trail vehicles to escort IR vehicles and proper marking of IR vehicles

NVD ACADEMICS

U.S. ARMY SAFETY CENTER

At minimum, training will include (cont..) :

- Scanning techniques.
- Emergency procedures.
- Driver/assistant driver responsibilities.
- Self-imposed stresses.
- Care and security of NVDs.

* *Must pass a written exam.*

PROFICIENCY TRAINING

U.S. ARMY SAFETY CENTER

The operator will receive hands-on instruction while driving under the following provisions:

- Task will be performed in Phase sequence (Task list - AR 600-55, appendix I-2)
- Under the supervision of a qualified NVD instructor (equipped with NVDs during night driver training).

PHASES OF TRAINING

U.S. ARMY SAFETY CENTER

The operator will receive hands-on instruction while driving, in sequence:

- *Phase I* - Drive vehicle in daylight - familiarize with terrain/road.
- *Phase II* - Using headlights (same route), at night w/o NVDs.
- *Phase III* - Pre-op check NVD, proper wear & fit, focus, vehicle PMCS W/NVD, refocus NVD prior to Phase IV.

PHASES OF TRAINING

U.S. ARMY SAFETY CENTER

The operator will receive hands-on instruction while driving, in sequence (cont..):

- *Phase IV* - Drive over same route with NVD on. ID markers, signs, terrain. Distinguish shadows from features.
- *Phase V* - Perform vehicle PMCS W/NVDs. Perform post-operation check on NVD. Conduct AAR.

MISSION: CONDUCT NIGHT DRIVER TRAINING

Hazards

- Convoy operations at night
- Inexperienced student drivers
- Unsecured vehicle equipment (Batteries)
- Inadequate training prior to NVG usage

Result:

- Vehicle destroyed by rollover and fire after leaving road
- 2 Fatalities

Controls

- Proper PMCS procedures
- Proper use of NVGs

REFRESHER TRAINING

U.S. ARMY SAFETY CENTER

Refresher training will be conducted for motor vehicle operators who have not Paraticipated in a NVD driving mission in the past 6 months (USAR & ARNG: 12 months) to maintain or regain proficiency. Minimum requirements for refresher training are:

- Demonstrate proficiency in qualification tasks.
- Successfully complete performance test by NVD instructor.

Leaders' INVOLVEMENT SAVES lives

CG9-04

QUESTIONS?